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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ESTREMSKY, SHERRY LYNN

ART UNIT	PAPER NUMBER
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3681

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/765,492

Applicant(s)

FLEYTMAN, YAKOV

Examiner

Sherry L Estremsky

Art Unit

3681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-17 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. The figures do not appear to show that the worms are enveloping worms. Therefore, the enveloping worms must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1, 6, 10, and 12-16 are objected to because of the following informalities: each of these claims includes the word "matting" where it appears --mating-- should be used. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 4 of both claims 6 and 10, "said satellite gear" is not clear since two satellites were claimed in the previous line. For the purpose of this action, the examiner is assuming "said satellite gear" is intended to mean the satellite gears.

Claim 16 is indefinite in claiming that the second satellite gear is a worm, since claim 10 (on which claim 16 depends) claimed that the second satellite gear is a conventional gear. Worms were mentioned elsewhere in claim 10, leading the examiner to believe that the term "conventional gear" was intended to mean a form of gear other than a worm. If the examiner is incorrect in this belief, then the scope of claim 10 is not clear. If the examiner is correct in this belief, then claim 16 is improperly attempting to remove a limitation of an earlier claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3681

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Watson, U. S. Patent 2,208,614.

Watson shows in figures 1-3 an epicyclic gear train.

Portions 3, 4, and 5 form a rotating carrier (column 1, lines 40-52).

Satellite gear 9 is rotatably supported by the carrier.

First and second coaxial gears 2 and 11 mesh with the satellite gear 9.

As best shown in figure 1, the carrier is coaxial with the first and second gears 2 and 11.

The satellite gear 9 is an enveloping (note area of engagement with gear 2 in figure 1) worm (column 1, line 54).
(claim 1)

As shown in figure 2, the worm 9 has threads with less than one revolution.
(claim 2)

The first and second gears 2 and 11 have an axis of rotation crossing the axis of rotation of the worm 9.
(claim 5)

7. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Mekjian, U. S. Patent 4,010,653.

Art Unit: 3681

Mekjian shows in figures 1-3 an epicyclic gear train.

Cage housing 48 is a rotating carrier (column 2, lines 63-66).

Satellite gear 50 is rotatably supported by the carrier 48.

First and second coaxial gears 45 and 74 mesh with the satellite gear 50.

As best shown in figure 2, the carrier 48 is coaxial with the first and second gears 45 and 74.

According to claim 2, the satellite gear is an enveloping (as much as can be with the shown arrangement of rotational axes) worm.
(claim 1)

As apparently shown in figure 2, the worm has threads with less than one revolution.
(claim 2)

The first and second gears have an axis of rotation parallel to the axis of rotation of the worm.
(claim 4)

8. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Hall, U. S. Patent 781,944.

Hall shows in figures 1 and 3 an epicyclic gear train.

Arm 7 is a rotating carrier.

First and second satellite gears 5 and 9 are rotatably supported by the carrier 7.

First and second coaxial gears 2 and 10 mesh with the satellite gears 5 and 9.

The carrier 7, including hub portion 8, is coaxial to the first and second gears 2 and 10.

The first satellite gear 5 is an enveloping worm (see particularly figure 3).

The second satellite gear 9 is a conventional gear.

The first gear 2 is a mating gear with the first enveloping worm 5.

Art Unit: 3681

The second gear 10 is a mating gear with the conventional gear 9.

9. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Yang, U. S. Patent 5,387,162.

Yang shows in figures 3 and 4 an epicyclic gear train.

A rotating carrier is shown supporting the satellite gears through bearings in figure 3 and is shown as being integral with the shaft in the left portion of figure 4.

First and second satellite gears 302 and 301 are rotatably supported by the carrier.

First and second coaxial gears 303 and 300 mesh with the satellite gears 302 and 301.

The carrier is coaxial to the first and second gears 303 and 300, as best shown in figure 4.

The first satellite gear 302 is an enveloping worm (see particularly figure 3).

The second satellite gear 301 is a conventional gear.

The first gear 303 is a mating gear with the first enveloping worm 302.

The second gear 300 is a mating gear with the conventional gear 301.

Allowable Subject Matter

10. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 6-9 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Art Unit: 3681

12. Claims 11-17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

No reference nor combination of references was found which teaches an epicyclic gear train including two satellite gears and two coaxial gears, wherein the satellite gears are coaxial with one another, are both worms, and are in mesh with the two coaxial gears, as required by claim 6.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent 1,567,933 (Fahnestock) December 1925 - discloses an epicyclic gear train using a worm.

U. S. Patent 2,973,660 (Popper) March 1961 - discloses different forms and arrangements of worms and worm wheels.

U. S. Patent 4,016,778 (von Greyerz) April 1977 - discloses an epicyclic gear train including worm satellites.

U. S. Patent 5,171,193 (Gagliano) December 1992 - discloses an epicyclic gear train in which coaxial satellites, including worms, mesh with two coaxial gears.

Art Unit: 3681

The following patents each disclose a differential using epicyclic worms:

U. S. Patent 3,899,939 (Hilado) August 1975 - includes coaxial worm satellites and two coaxial gears with an axis of rotation parallel to that of the satellites. The coaxial satellites do not mesh with the two coaxial gears,

U. S. Patent 4,512,211 (Stritzel) April 1985,

U. S. Patent 5,088,970 (Dye) February 1992,

U. S. Patent 5,108,353 (Brewer et al.) April 1992,

U. S. Patent 5,112,284 (Dye) May 1992,

U. S. Patent 5,232,415 (Brewer et al.) August 1993,

U. S. Patent 5,453,062 (White et al.) September 1995, and


U. S. Patent 6,582,338 (Fleytman) June 2003.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherry L Estremsky whose telephone number is (571) 272-7090. The examiner can normally be reached on Tuesday and Friday from 7:30 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SHERRY ESTREMSKY
PRIMARY EXAMINER
AV3681 5-27-05